IN THE CLAIMS

1. (Canceled)

2. (Currently amended) A communications receiver as set forth in claim ~~1~~15 wherein the means for converting the wide band carrier to baseband in I and Q components ~~dividing the detected band into sub-bands~~ comprises means for mixing the radio signal with a single local oscillator output to downconvert the radio signal to the frequency at which the processing is to occur, and subsequently dividing the downconverted signal into the sub-components ~~with bandwidth equal to the sub-bands~~ for independent and simultaneous processing.

3. (Currently amended) A communications receiver as set forth in claim ~~1~~15 wherein the means for converting the wide band carrier to baseband in I and Q components ~~dividing the detected band into sub-bands~~ comprises means for mixing the radio signal with a single local oscillator output to downconvert the radio signal to an intermediate frequency, and subsequently dividing the downconverted signal into the sub-components ~~with bandwidth equal to the sub-bands~~ for independent and simultaneous processing.

4. (Currently amended) A communications receiver as set forth in claim 2 wherein the means for converting the wide band carrier to baseband in I and Q components ~~dividing the detected band into components with bandwidth equal to the sub-bands further~~ comprises means for mixing the downconverted signal with locally generated signals to produce the sub-components.

5. (Original) A communications receiver as set forth in claim 4 where the mixing with the locally generated signals uses multiplier DAC's with the digital input driven by the low frequency digital local oscillator signals.

6. (Original) A communications receiver as set forth in claim 5 where the multiplier DAC's provide Gain Control for Automatic Gain Adjustment.

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7. (Currently amended) A communications receiver as set forth in claim 4 wherein the means for processing that portion of the information contained in each of the sub-components ~~with bandwidth equal to the sub-bands~~ comprises an analog to digital converter.

8. (Original) A communications receiver as set forth in claim 7 wherein the analog to digital converter is a sigma-delta analog to digital converter with a programmable oversampling ratio for Wideband or Narrow band conversion.

9. (Canceled)

10. (Currently amended) A method as set forth in claim ~~9~~ 16 wherein converting the wide band carrier to baseband in I and Q components ~~subdividing the detected band into sub-bands~~ comprises mixing the radio signal with a single local oscillator output to downconvert the radio signal to the frequency at which the processing is to occur and subsequently dividing the downconverted signal into the sub-components ~~with bandwidth equal to the sub-bands~~ for independent and simultaneous processing.

11. (Currently amended) A method as set forth in claim 169 wherein converting the wide band carrier to baseband in I and Q components ~~subdividing the detected band into sub-bands~~ comprises mixing the radio signal with a single local oscillator output to downconvert the radio signal to an intermediate frequency and subsequently dividing the downconverted signal into the sub-components ~~with bandwidth equal to the sub-bands~~ for independent and simultaneous processing.

12. (Currently Amended) A method as set forth in claim 10 wherein converting the wide band carrier to baseband in I and Q components ~~dividing the detected band into components with bandwidth equal to the sub-bands further~~ comprises mixing the downconverted signal with locally generated signals to produce the sub-components.

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13. (Currently Amended) A method as set forth in claim 12 wherein processing that portion of the information contained in each of the sub-components ~~with bandwidth equal to the sub-bands~~ comprises an analog to digital conversion.

14. (Currently Amended) A method as set forth in claim 13 wherein the analog to digital conversion~~ter~~ is a sigma-delta analog to digital conversion~~ter~~ with a programmable oversampling ratio for Wideband or Narrow band processing.

15. (Currently Amended) A communications receiver adapted to receive and process information transmitted as either a wide band signal or a narrow band signal having In-phase-Quadrature-phase (IQ) modulation of a carrier, comprising:

means for detecting a portion of the spectrum wide enough to encompass the bandwidth (BW) of a wide band carrier signal

means for converting the wide band carrier to baseband in I and Q components, each component having a bandwidth of BW/2, and

~~means~~ for converting the I and Q components into further I and Q components to form sub-components II, IQ, QI, and QQ, where each of the sub-components has a bandwidth of BW/4- and may contain a portion of the originally transmitted information,

means~~,~~ operable in a wideband mode for separately processing each of the sub-components to extract portions of the originally transmitted information, and

means~~,~~ operable in a narrowband mode for separately processing each of the sub-components containing information within the narrow band transmitted carrier to extract portions of the originally transmitted information, and

means for recombining the extracted information to reconstruct the originally transmitted information.

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16. (Currently Amended) A method for receiving and processing information transmitted on either a wide band carrier or a narrow band carrier having In-phase-Quadrature-phase (IQ) modulation, comprising:

detecting a portion of the spectrum wide enough to encompass the bandwidth (BW) of a ~~the~~ wide band carrier (BW),

converting the wide band carrier to baseband in I and Q components, each component having a bandwidth of BW/2,

converting the I and Q components into further I and Q components to form sub-components II, IQ, QI, and QQ, where each of the sub-components have a bandwidth of BW/4 and may contain a portion of the originally transmitted information,

in a wideband mode, separately processing each of the sub-components to extract portions of the originally transmitted information, and

in a narrowband mode, separately processing each of the sub-components containing information within the narrow band transmitted carrier to extract portions of the originally transmitted information,

recombining the extracted information to reconstruct the originally transmitted information; and

where the paths of two sub-components are disabled in Narrow band mode.

17. (Previously canceled)

18. (Currently amended) A method as set forth in claim 16 where Digital gain and phase correction for the four sub-components is performed in combination with the complex mixing with the digital local oscillator during the recombination process.

19. (Original) A method as in claim 18 where Phase discontinuity is removed by phase shifting the digital local oscillator during the recombination process.

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